

**AMENDMENT TO THE SPECIFICATION**

Applicants respectfully request amendment of paragraphs [018], [035], [036], [037], [048], [050], [051], [052], [066] and [067] of the specification as follows:

**Please delete paragraph [018] which spans over pages 6 and 7 of the application as filed, and replace it with the following paragraph:**

[018] Figure 3 illustrates exemplary fractions isolated or derived from hops. Figure 3A shows the alpha-acid genus (AA) and representative species humulone ( $R = -CH_2CH(CH_3)_2$ ), cohumulone ( $R = -CH(CH_3)_2$ ), and adhumulone ( $R = -CH(CH_3)CH_2CH_3$ ); Figure 3B shows the isoalpha acid genus (IAA) and representative species isohumulone ( $R = -CH_2CH(CH_3)_2$ ), isocohumulone ( $R = -CH(CH_3)_2$ ), and isoадhumulone ( $R = -CH(CH_3)CH_2CH_3$ ); Figure 3C shows the reduced isomerized isoalpha acid genus (RIAA) and representative species dihydro-isohumulone ( $R = -CH_2CH(CH_3)_2$ ), dihydro-isocohumulone ( $R = -CH(CH_3)_2$ ), and dihydro-isoадhumulone ( $R = -CH(CH_3)CH_2CH_3$ ); Figure 3D shows the tetra-hydroisoalpha acid genus (THIAA) and representative species tetra-hydro-isohumulone ( $R = -CH_2CH(CH_3)_2$ ), tetra-hydro-isocohumulone ( $R = -CH(CH_3)_2$ ), and tetra-hydro-isoадhumulone ( $R = -CH(CH_3)CH_2CH_3$ ); Figure 3E shows and the hexa-hydroisoalpha acid (HHIAA) genus with representative species hexa-hydro-isohumulone ( $R = -CH_2CH(CH_3)_2$ ), hexa-hydro-isocohumulone ( $R = -CH(CH_3)_2$ ), and hexa-hydro-isoадhumulone ( $R = -CH(CH_3)CH_2CH_3$ ).

**Please delete paragraphs [035]-[037] on page 9 of the application as filed, and replace it with the following paragraphs:**

[035] As used herein, the term “reduced isoalpha acid” refers to alpha acids isolated from hops plant product and which subsequently have been isomerized and reduced, including cis and trans forms. Examples of reduced isoalpha acids (RIAA) include, but are not limited to, dihydro-isohumulone, dihydro-isocohumulone, and dihydro-isoадhumulone.

[036] As used herein, the term “tetra-hydroisoalpha acid” refers to a certain class of reduced isoalpha acid. Examples of tetra-hydroisoalpha acid (THIAA) include, but are not limited to, tetra-hydro-isohumulone, tetra-hydro-isocohumulone and tetra-hydro-isoадhumulone.

[037] As used herein, the term “hexa-hydroisoalpha acid” refers to a certain

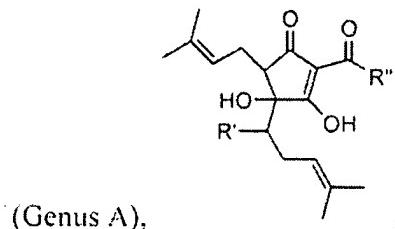
class of reduced isoalpha acid. Examples of hexa-hydroisoalpha acids (HHIAA) include, but are not limited to, hexa-hydro-isohumulone, hexa-hydro-isocohumulone and hexa-hydro-isoadhumulone.

**Please delete paragraph [048] on page 12 of the application as filed, and replace it with the following paragraph:**

[048] The invention provides compositions containing at least one fraction isolated or derived from hops (*Humulus lupulus*). Examples of fractions isolated or derived from hops are alpha acids, isoalpha acids, reduced isoalpha acids, tetra-hydroisoalpha acids, hexa-hydroisoalpha acids, beta acids, and spent hops. Fractions isolated or derived from hops, include, but are not limited to, cohumulone, adhumulone, isohumulone, isocohumulone, isoadhumulone, dihydro-isohumulone, dihydro-isocohumulone, dihydro-isoadhumulone, tetrahydro-isohumulone, tetrahydro-isocohumulone, tetrahydro-isoadhumulone, hexahydro-isohumulone, hexahydro-isocohumulone, and hexahydro-isoadhumulone. Preferred compounds can also bear substituents, such as halogens, ethers, and esters.

**Please delete paragraph [050] on page 13 of the application as filed, and replace it with the following paragraph:**

[050] In another embodiment, compounds of the fractions isolated or derived from hops can be represented by a genus below:

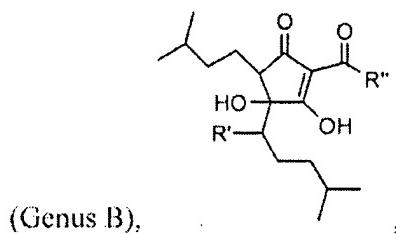


wherein R' is selected from the group consisting of carbonyl, hydroxyl, OR, and OCOR, wherein R is alkyl; and wherein R'' is selected from the group consisting of CH(CH<sub>3</sub>)<sub>2</sub>, CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, and CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>. Exemplary Genus A structures include isoalpha acids such as isohumulone, isocohumulone, isoadhumulone, and the like, and reduced isoalpha acids such as

dihydro-isohumulone, dihydro-isocohumulone, dihydro-isoadhumulone, and ether or ester conjugates or halogenated modifications of the double bond.

**Please delete paragraph [051] which spans between pages 13 and 14 of the application as filed, and replace it with the following paragraph:**

1. In yet another embodiment, compounds of the fractions isolated or derived from hops can be represented by a genus below:



wherein R' is selected from the group consisting of carbonyl, hydroxyl, OR, and OCOR, wherein R is alkyl; and wherein R'' is selected from the group consisting of CH(CH<sub>3</sub>)<sub>2</sub>, CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, and CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>. Exemplary Genus B structures include tetra-hydroisoalpha acids such as tetra-hydro-isohumulone, tetra-hydro-isocohymulone and tetra-hydro-isoadhumulone, and the like, and hexa-hydroisoalpha acids such as hexa-hydro-isohumulone, hexa-hydro-isocohumulone and hexa-hydro-isoadhumulone, and ether or ester conjugates.

**Please delete paragraph [052] on page 14 of the application as filed, and replace it with the following paragraph:**

- [052] As shown in Figure 3, examples of compounds of an ingredient isolated or derived from hops, include, but are not limited to, humulone, cohumulone, adhumulone, isohumulone, isocohumulone, isoadhumulone, dihydro-isohumulone, dihydro-isocohumulone, dihydro-isoadhumulone, tetrahydro-isohumulone, tetrahydro-isocohumulone, tetrahydro-isoadhumulone, hexahydro-isohumulone, hexahydro-isocohumulone, and hexahydro-isoadhumulone. The compounds can bear substituents, as shown in the formula above.

**Please delete paragraphs [066]-[067] on page 19 of the application as filed, and replace it with the following paragraphs:**

- [066] In one embodiment, the invention provides a composition comprising a

reduced isoalpha acid (RIAA) and isoalpha acid (IAA) isolated from hops, wherein the RIAA and IAA are in a ratio of about 3:1 to about 1:10. In such a composition, the isoalpha acid can be selected from isohumulone, isocohumulone, and iso~~ad~~humulone. The reduced isoalpha acid can be selected from dihydro-isohumulone, dihydro-isocohumulone, and dihydro-isoadhumulone.

[067] The invention also provides a method of reducing inflammation by administering a composition comprising a reduced isoalpha acid (RIAA) and isoalpha acid (IAA) isolated from hops, wherein the RIAA and IAA are in a ratio of about 3:1 to about 1:10. The isoalpha acid can be selected from isohumulone, isocohumulone, and iso~~ad~~humulone. The reduced isoalpha acid can be selected from dihydro-isohumulone, dihydro-isocohumulone, and dihydro-isoadhumulone.